

ABOUT THE SANCTUARY

Olympic Coast National Marine Sanctuary spans 3,189 square miles of marine waters off the rugged Olympic Peninsula coastline. The sanctuary extends 25 to 50 miles seaward, covering much of the continental shelf and several major submarine canyons.

The sanctuary protects a productive upwelling zone home to numerous marine mammal and seabird species, diverse populations of kelp and intertidal algae, and thriving invertebrate communities. The sanctuary is also rich in cultural resources, with over 150 documented historical shipwrecks and the vibrant contemporary cultures of the Makah, Quileute and Hoh Indian Tribes, and the Quinault Nation.

OFFICE REPORT

OLYMPIC COAST NATIONAL MARINE SANCTUARY NEWS AND PROGRAM UPDATES

Organized by Olympic Coast National Marine Sanctuary management plan priority areas.

FULFILL TREATY TRUST RESPONSIBILITY

IPC holds Annual Meeting with ONMS Director

The annual meeting of the Olympic Coast Intergovernmental Policy Council (IPC) was held in October in Taholah, WA. NOAA was represented by the Olympic Coast National Marine Sanctuary (OCNMS) superintendent, the director of the Office of National Marine Sanctuaries (ONMS), the director of the West Coast Regional Office, and staff from the sanctuary and the Office of Coastal Management (OCM). The focus of the meeting was to present the 2015 annual report and to discuss ongoing projects. Staff from OCNMS, OCM, and the Northwest Indian Fisheries Commission (NWIFC) presented on the 2016 objectives for the IPC Habitat Framework. As this high priority project is now moving from the data collection phase to the active development of the Coastal and Marine Ecological Classification Standard habitat classification and map production, the technical team from OCNMS, OCM and NWIFC

determined individual tasks and responsibilities, established periodic products for the sanctuary advisory committee and the Intergovernmental Policy Council, and determined a probable status report deadline.

Olympic Coast National Marine Sanctuary & Marine Protected Area Center Hosts Tribal Consultation Webinar

On November 18, as part of efforts by NOAA's Tribal Team to share experiences on tribal consultation, staff from Olympic Coast National Marine Sanctuary discussed how they implemented the NOAA government-to-government consultation policy by using a practical example illustrating informal dialogue leading to formal consultation. Forty people participated in the webinar.

The sanctuary is located within the usual and accustomed fishing areas of four federally recognized treaty tribes along the coast: the Hoh, Makah and Quileute tribes, and the Quinault Indian Nation. Olympic Coast National Marine Sanctuary and the Office of National Marine Sanctuaries (ONMS) staff communicate and consult with the coastal treaty tribes. These communications and consultations predate the sanctuary's designation in 1994 as well as the current NOAA Tribal Consultation Policy (<http://go.usa.gov/cUXjV>). Presenters discussed how ONMS initiated a dialogue in 2012 with the coastal treaty tribes for a potential rulemaking that would revise and consolidate program-wide and site-specific regulations. Starting with the proposed rulemaking, speakers outlined the steps that ultimately resulted in a government-to-government meeting with the Makah Tribe in January 2015 and the establishment of a permit consultation policy specific to the Makah Tribe.

ACHIEVE EFFECTIVE AND COORDINATED MANAGEMENT

Sanctuary Law Enforcement Technical Advisory Committee Meets

The Olympic Coast National Marine Sanctuary Law Enforcement Technical Advisory Committee (LETAC) conducted its biannual meeting and discussed a number of sanctuary enforcement issues. LETAC is coordinated by the NOAA Office of Law Enforcement (OLE) and comprises the U.S. Coast Guard, OLE, OCNMS and the Washington State Department of Fish and Wildlife. The NOAA Office of General Council also participated on the call.

National Marine Fisheries Service Office of Protected Resources Meets with Sanctuary

The Olympic Coast National Marine Sanctuary Advisory Council met with National Marine Fisheries Service Office of Protected Resources regional staff to discuss areas of potential collaboration. Some of the topics included marine mammal strandings, review of regional federal actions, Southern Resident orcas, acoustic research, education, and outreach.

Director of Office of Law Enforcement Meets with Sanctuary Staff

The recently appointed head of NOAA's Office of Law Enforcement and the assistant director for the West Coast Division met with Olympic Coast National Marine Sanctuary staff to discuss sanctuary enforcement needs and priorities.

National Marine Sanctuary Foundation Briefs Department of Justice

The National Marine Sanctuary Foundation (NMSF) briefed the United States Attorney for the Western District of Washington on its efforts related to community services payments. Settlements from prosecutions involving environmental crimes can result in community service payments. NMSF has managed over \$5.4 million in community service payments since 2008. These funds have been used to support science, research, and restoration of coastal and marine resources and environments across the National Marine Sanctuary System as well as other regions with a connection to the violation. To date, NMSF has not had the opportunity to manage such a project within Olympic Coast National Marine Sanctuary. The sanctuary superintendent provided background on the sanctuary, sanctuary resources, partnerships and programs.

Sanctuary Participates in Washington CoastSavers Strategic Planning Meeting

Olympic Coast National Marine Sanctuary staff joined an annual meeting of Washington CoastSavers to define strategic priorities for future program sustainability, growth and impact, and to review the draft Organizational and Operational Plan for 2016-2020. Washington CoastSavers steering committee members reviewed Steering Committee roles, actions and principles, a CoastSavers glossary and goals in funding, cleanup coordination, and outreach coordination. Washington CoastSavers coordinates two annual beach cleanup events that engage more than 1,000 volunteers in removing debris from hundreds of miles of Washington's shoreline. Program growth in recent years has included significant expansion of the range cleaned, affiliations with outreach events that promote cleanups, and participation in July 5th cleanups following firework use.

IMPROVE OCEAN LITERACY

Olympic Coast Discovery Center Docents Visit Beachcombing Museum

On November 12, Olympic Coast Discovery Center volunteers and staff took a field trip to the Beachcombing Museum in Forks, WA. The private collection of beachcombing enthusiast and local resident, John Anderson, consists of items he has found since 1976. The collection is well-organized and tells stories about marine debris and human consumption of materials over the decades. The Beachcombing Museum opened in the summer of 2015 to showcase spectacular findings on our outer coast beaches, as well as other beaches in the world.



Olympic Coast Students Featured on Cousteau EarthEcho Expedition



During the week of November 16, the EarthEcho Expeditions program spoke with young people in and around Washington, particularly tribal youth, about their perspectives on climate change and ocean acidification. On November 16th, EarthEcho met with Neah Bay High School students as they conducted investigations of our changing ocean and the impacts of a changing ocean on both food sovereignty and economics within their community. Makah Tribe students conducted water quality tests (plankton tow, plankton observation and water chemistry) aboard *Wind Song* and discussed harmful algal blooms with staff from Makah Tribe Fisheries and OCNMS. Leading up to the youth investigations, the EarthEcho team interviewed local community members Aaron Parker, water quality specialist for Makah Tribe Fisheries, Jason

Roberts, Makah Tribe fisherman, and Janine Ledford, Makah Cultural and Research Center director, as well as Liam Antrim, OCNMS acting research coordinator. The interviews and youth investigations will be featured by EarthEcho Expeditions, an international environmental education organization (<http://earthecho.org>). EarthEcho was founded by Philippe and Alexandra Cousteau in honor of their father Philippe Cousteau Sr., son of the French explorer Jacques Yves Cousteau.

COASST Delivers Trainings on Marine Debris Monitoring

This first official training after a year of pilot trainings took place in the OCNMS classroom on November 15, 2015. The COASST marine debris protocol differs from the 2012-established NOAA marine debris monitoring protocol, which OCNMS has also been supporting. The NOAA marine debris protocol was designed as a rapid, quantitative beach assessment for collection of standardized and consistent data that can be applied to address policy and management needs at various spatial scales. For NOAA marine debris monitoring, the data is collected in a 100 meter stretch from the water's edge to the vegetation. It is then tallied and classified by material type. The COASST marine debris protocol has a focus on harm to wildlife and is interested in the characteristics of the debris and how the debris interacts with wildlife. Each piece of debris is photographed and various characteristics are recorded, such as material type, color, weathering, biofouling and others. The COASST marine debris protocol was designed to be compatible with the NOAA Marine Debris Program's national database. The different monitoring efforts are thus complementary, but differ in intent. The NOAA marine debris monitoring is designed for a more general rapid assessment of debris on the shoreline and the COASST marine debris program is more detail-oriented, designed to address harm to wildlife.

B-WET Grant Writing Webinar Offered to West Coast Region

California and Pacific Northwest Bay Watershed Education and Training (B-WET) programs, in partnership with the National Marine Sanctuary Foundation, presented a B-WET Grant Proposal Writing Webinar by National Marine Sanctuary Foundation relations manager Audrey Milner. The grant writing webinar focused on how to prepare a competitive B-WET proposal. Techniques covered in this webinar may also increase an organization's capacity to identify and prepare competitive grant proposals to other funding sources.

Seattle Aquarium's Family Discover Science Weekend Draws Thousands

On November 14, OCNMS staff hosted an educational booth at the Seattle Aquarium as part of the annual Family Science Weekend. More than 5,000 visitors interested in ocean conservation and marine science took advantage of the education opportunities and information provided during the Family Science Weekend, learning about ocean exploration, ocean chemistry, citizen science and marine mammals from more than 20 exhibits and booths. OCNMS conducted outreach about the success story of the Washington sea otters population through providing information about their critical role in the health of kelp forests and leading a mock sea otter population survey.



Olympic Coast National Marine Sanctuary Supports Field Sampling Experience for Oceanography Students

On November 16, five groups of students from Peninsula College's oceanography class gained experience with a variety of marine sampling techniques off the Port Angeles City Pier. Each group collected a sediment sample with a Van Veen grab, water samples at different depths with a Niskin bottle, a plankton sample with a plankton net, and estimated water clarity with a Secchi disk. Samples were taken into Feiro Marine Life Center's classroom, where students sieved sediment samples for marine worms, measured water quality parameters with a Horiba meter and refractometer, and identified and counted copepods and *Coscinodiscus* sp. collected by plankton net using microscopes. OCNMS Survey Technician Kathy Hough supervised students in their data and sample collection, reviewed potential technique impacts on sample results, and discussed advanced education and career options with students, while oceanography instructor Dr. Ian Miller directed sample analyses. Students were also introduced to oceanographic equipment used in sanctuary moorings, various types of personal flotation devices, and the donning of survival suits.



Annual Award Ceremony Honors Olympic Coast Discovery Center Volunteers

On November 20, OCNMS hosted the annual Olympic Coast Discovery Center Volunteer Awards Ceremony in the OCNMS classroom, featuring a Hoh Tribal presentation by Hoh storyteller Viola Riebe and her family. Education staff Jacqueline Laverdure and Nicole Harris also presented a slideshow about the 2015 Hoh Watershed summer camp. Volunteer awards were announced by the Olympic Coast Discovery Center manager, Karlyn Langjahr. Jim Jewell, in his eleventh season, was awarded Top Volunteer for 2015 with 206 volunteer hours; Carol Turner and Leslee Crate tied for Runner-Up Volunteers, clocking 151 and 150 hours, respectively. Sue Griffith received Honorable Mention for her 129 hours of volunteer service. All volunteers were celebrated with a potluck dinner with several OCNMS staff.



Olympic Coast National Marine Sanctuary Presents Marine Debris Issues at Peninsula Community College

Heidi Pedersen, NOAA marine debris monitoring volunteer coordinator at Olympic Coast National Marine Sanctuary, presented relevant marine debris topics to Dr. Ian Miller's Introduction to Oceanography class at Peninsula Community College in Port Angeles. Students had a visual and tactile experience with debris that comes to Washington shores.

Olympic Coast National Marine Sanctuary Participates in Career Panel

Personnel from Olympic Coast National Marine Sanctuary participated in a career panel for Dr. Ian Miller's oceanography class at Peninsula College, Port Angeles. The panel included scientists involved with marine debris and seabird mortality monitoring, oceanographic research, and marine energy development; the education coordinator of Feiro Marine Life Center; and an U.S. Coast Guard member who utilizes real-time oceanographic data in search and rescue missions. Each panel member gave a brief overview of their education, past employment experience, and current work responsibilities. Students learned how diverse a marine-related career can be, how careers can evolve over time and be multi-faceted, and that different skill-sets can be gained through both education and work experience. Several panelists emphasized the need for practical experience early on and the ability to adapt to changing research requirements.

Sanctuary Staff Attends Olympic Peninsula Tourism Commission Meeting

On December 3, the Olympic Peninsula Tourism Commission held its monthly meeting at the Port Ludlow Resort. Sanctuary staff provided a brief report of upcoming activities and networked with other members. Agenda items included an update on the Washington Tourism Alliance, legislative updates, the draft 2016 budget and marketing plans, and more.

Sanctuary Receives Hands on the Land Mini-Grant

Education staff at Olympic Coast National Marine Sanctuary were awarded a "Hands on the Land" mini-grant to deliver high-quality, place-based environmental education to indigenous high school students along Washington's coast. The funds will be used to bring high school students from the Coastal Treaty Tribes into the sanctuary to conduct marine science to better understand their local ecosystem and the impacts associated with our changing ocean environment. Funding support for these grants comes from the Environmental Protection Agency and the National Environmental Education Foundation.

Sanctuary Staff and Friends Groups Participate in Fundraising Training

On November 18-22, staff from eight different national marine sanctuaries and their associated friends groups participated in a tailored course, "Principles and Techniques for Fundraising," in Florida Keys National Marine Sanctuary. The course provided concepts and hands-on exercises to understand the fundraising cycle, equipping staff to be more successful in raising funds for critical projects.

Education Program Completes North Olympic Watershed Science

OCNMS Washington Service Corps AmeriCorps member completed the fall North Olympic Watershed (NOW) Science Program in partnership with Feiro Marine Life Center. Fifteen 4th grade classes from Port Angeles and Sequim school districts participated in ocean science education through classroom visits and field investigations. Through hands-on activities and classroom presentations, students learned about OCNMS and the marine environment, the albatross, invertebrate feeding techniques, plankton and the marine food web, marine debris, and microplastics. Students completed pre- and post-lesson surveys, showing an overall increase in awareness and knowledge of topics discussed, and developed individual action plans to reduce the impact of marine debris. NOW Science programs are developed to complement Next Generation Science Standards.



Underwater Robotics Fall Semester Concludes at U.S. Coast Guard Base



Olympic Coast National Marine Sanctuary and Feiro Marine Life Center finalized the fall semester of the underwater robotics club with a challenge course at the U.S. Coast Guard station in Port Angeles. Twelve students tested their remotely operated vehicle (ROV) skills after a twelve-week ROV beginner's course. During the ROV 101 afterschool club fall program, youth participants learned the basics of team building, balance, buoyancy, electronics and vehicle building. The U.S. Coast Guard station graciously hosted the final challenge course in their hangar, followed by a tour of one of the base helicopters. Students who completed the fall semester of ROV 101 can sign up for ROV 102 starting in mid-January, which includes a regional underwater robotics competition through Sea Perch (www.seaperch.org).

Ecosystem Pen Pals Program Connects Pacific Rim Sanctuary Education Teachers

OCNMS education staff gave orientation webinars to teachers in Hawaii and American Samoa as part of a new pen pal program around the Pacific Basin. In its first year, Ecosystem Pen Pals is funded through Pacific Northwest Bay Watershed Education and Training (B-WET), and will connect high school youth in coastal communities from Washington state, Hawaii and American Samoa. Focusing on indigenous youth around the Pacific Rim, teachers will engage their students in writing four letters throughout the year in which they share information about their local ecosystems and cultures, while looking at ocean acidification and climate change impacts to their resources. Students will also learn about their local national marine sanctuaries.

Education specialist Isabel Gaoteote from National Marine Sanctuary of American Samoa visited OCNMS offices and the Olympic Coast Discovery Center in Port Angeles and traveled to OCNMS sites, including Cape Flattery (the northwestern point of the contiguous United States), Kalaloch Beach, and Point Grenville and Taholah on the Quinault Indian Reservation. Isabel met with high school students at Taholah, who will be pen pals with American Samoa youth, with staff at Quinault Indian Fisheries, and with Ecosystem Pen Pal leads and teachers in Washington. The connection between OCNMS and National Marine Sanctuary of American Samoa was strengthened through this visit.



Neah Bay Students Conduct Beach Cleanup at Their Adopted Beach



Olympic Coast National Marine Sanctuary staff visited Linda Johnson's 4th grade classroom in Neah Bay, Washington, to conduct a NOAA marine debris survey at their site on Front Street Beach. The students successfully removed several large marine debris items off of the beach, including three tires and a full garbage bag of smaller marine debris items. The 19 students assisted in categorizing the debris and participated in discussions about where the debris came from, ocean currents, how shoreline debris becomes marine debris and vice-versa, harmful effects of marine debris, and what we can do about it. The study site is a five minute walk from the school, and studies will be conducted on a monthly basis throughout the school year.

Pacific Northwest B-WET Announces 2016 Federal Funding Opportunity

NOAA's Office of Education is now seeking proposals under the Pacific Northwest Bay-Watershed Education and Training (PNW B-WET) Program. The full FY16 Federal Funding Opportunity (FFO) can be found at Grants.gov under funding opportunity number NOAA-NOS-ONMS-2016-2004700. The B-WET Program is an environmental education program that supports locally-relevant experiential learning in the K-12 environment. Funded projects provide meaningful watershed educational experiences for students and related professional development for teachers, and help to support regional education and environmental priorities in the Pacific Northwest. The primary delivery is through competitive grants.

Ocean Shores Interpretive Center Hosts Lecture on Olympic Coast National Marine Sanctuary

On January 13, the Ocean Shores Interpretive Center hosted Olympic Coast National Marine Sanctuary (OCNMS) as part of a lecture series. OCNMS staff provided information and educational resources on the sanctuary. Thirty community members, many who are summer volunteer docents for the Ocean Shores Interpretive Center, attended the evening presentation. Participants learned more about the history of marine sanctuaries and OCNMS, as well as the animals, habitats and communities supported by one of America's underwater treasures. The successful lecture series is an outreach effort through the Interpretive Center to educate volunteers and community members on environmental science and stewardship in the area.



CONDUCT COLLABORATIVE RESEARCH, ASSESSMENTS AND MONITORING TO INFORM ECOSYSTEM-BASED MANAGEMENT

Washington State Outer Coast Seafloor Atlas is Live for Download

A Seafloor Atlas has been created through a partnership with the Washington Department of Natural Resources, Oregon State University Active Tectonics & Seafloor Mapping Lab (AT&SL), and Olympic Coast National Marine Sanctuary. The Seafloor Atlas is a combination of two Washington Outer Coast seafloor maps: 1) a fine-scale map from OCNMS based on 35 multibeam and sidescan sonar surveys conducted from 2000-2013 and re-processed by AT&SL, and 2) the coarser-scale Surficial Geologic Habitat Map v4 (SGHv4) produced by AT&SL from multiple sources including sonar surveys, sediment

samples, seismic reflection profiles and video images. The seafloor has been characterized using NOAA's Coastal and Marine Ecological Classification Standard. The atlas is now available for review and download at: <http://go.usa.gov/cURS4>.

OCNMS Embarks on Harmful Algal Bloom Emergency Response Survey

On November 16-20, LTJG Justin Ellis of Olympic Coast National Marine Sanctuary collected water samples aboard R/V *Thompson* as part of a wide-scale monitoring effort in response to harmful algal blooms on the West Coast in collaboration with Northwest Fisheries Science Center. The University National Oceanographic Laboratory System ship, staffed by University of Washington Applied Physics Lab technicians, also recovered the NANOOS Cha'ba research buoy which monitors oceanographic data in the sanctuary and deployed a robust mooring to continue monitoring ocean conditions during the winter months.



Collaboration Seeks Funding to Explore Quinault Canyon

The first exploration of Quinault Canyon with modern deep-sea technologies has been proposed to NOAA's Office of Ocean Exploration and Research as a collaboration between NOAA's Olympic Coast National Marine Sanctuary and Northwest Fisheries Science Center, the Quinault Indian Nation, and Ocean Exploration Trust. The Quinault Canyon intrudes into the continental shelf off Washington's outer coast, is the deepest site within sanctuary boundaries, is within the usual and accustomed fishing grounds of the Quinault Nation, and is a source of nutrient-rich upwelling to coastal waters, as well as periodic intrusions of low-oxygenated, or hypoxic, waters. If funded, the survey will use sonar technologies for fine-scale bathymetry and mapping, and both a remotely operated vehicle (tethered to the ship) and an autonomous (free floating) underwater vehicle for photography and limited sample retrieval from waters between 100m and 500m deep.

CONSERVE NATURAL RESOURCES IN THE SANCTUARY

Oil Spill Planning Community Strategizes for Next Year

Olympic Coast National Marine Sanctuary staff participated in the annual Northwest Area Contingency Plan (NWACP) Summit. The NWACP documents how responsible parties and government agencies would respond to an oil spill. The summit is an annual meeting where Northwest Area Committee members, governments and stakeholders identify priorities for improving the NWACP. The committee selects task forces that collaborate to research priority topics and to make recommendations.

Aquatic Invasive Species Team Visits Misawa Dock Site

On December 17, 2015, the Washington Department of Fish and Wildlife's Aquatic Invasive Species (AIS) team completed a second assessment survey at the site of the Misawa dock grounding south of Mosquito Creek. This is one of four docks from Misawa Harbor that broke loose during the tsunami that struck Japan in March 2011. This dock grounded at a remote location on the shore of Olympic National Park and Olympic Coast National Marine Sanctuary in December 2012. The AIS Team is funded in part by funds provided by the Japanese government to support tsunami debris response in the United States. Sanctuary staff joined the AIS team on a preliminary site assessment survey in April 2015. These surveys included a focused search of intertidal areas at the dock grounding site and collection of animals and algae specimens for taxonomic identification. In addition, the field crew documented potential tsunami debris on adjacent shores and collected organism specimens from debris biofouling.

Fukushima Radionuclide Monitoring

Kelp Watch 2015 has completed four rounds of kelp sampling since the winter of 2014 along eastern Pacific shores between Alaska and California. All samples have been negative for the Fukushima marker, radioisotope Cesium (Cs) 34. The most recent sampling was conducted in the spring of 2015 and ranged from Kodiak Island, AK to Humboldt County, CA. A team at Woods Hole Oceanographic Institution recently released their latest findings from seawater samples collected during the spring and summer of 2015. They found Cs-34 in seawater from Dillon Beach, CA and San Diego, CA, as well as water samples from Ucluelet, BC. A kelp sample from Tofino, near Ucluelet, was collected a few days before the water sample and was negative for Cesium 34. More information is available at <https://kelpwatch.berkeley.edu/>.

Fishing Vessel Lost Off the Olympic Coast

At approximately 3AM on December 17, 2015, the Coast Guard received a mayday from the F/V *Norn* reporting that the vessel was taking on water approximately 38 nm west of Quillayute River. The three-member crew abandoned ship to their life raft and was rescued by a Coast Guard motor lifeboat. The Coast Guard reported the temperature was 38 degrees with 40 mph winds, rain, 14-foot seas and 48-degree water. The last known position of the vessel was approximately 1 nm outside of the sanctuary.

UNDERSTANDING THE SANCTUARY'S CULTURAL, HISTORICAL AND SOCIOECONOMIC SIGNIFICANCE

Sanctuary Participates in Northwest Tribal Tourism Meeting at Elwha Heritage Center

The Northwest Tribal Tourism held a series of meetings called “Be a Voice” in the Pacific Coast Scenic Byway and Tourism Conversation. On November 10, sanctuary staff member Karlyn Langjahr participated in the Port Angeles meeting hosted by the Lower Elwha Klallam Tribe at the Elwha Klallam Heritage Center. Participants represented tribes, tourism industry professionals and local business owners. Discussions centered on connecting the various opportunities offered by Highway 101 in the areas of cultural heritage, arts, recreation, environment and casinos. The sanctuary joined in order to offer collaboration on appropriate areas, voiced its support for promoting awareness of tribes and their cultural heritage, and discussed how the four Coastal Treaty Tribes are involved with the sanctuary and related issues.

SANCTUARY PERMITTING

Issued Permits and Authorizations

OCNMS-2005-013 – Kurt Johnson, PC Landing Corp.

Project Title: Operation, Maintenance, Reinstallation and Removal of PC-1 Fiber Optic Cables in Olympic Coast National Marine Sanctuary

Permitted Activity: Altering or disturbing the seafloor in connection with the continued placement, operation, repair, remediation and removal of the PC-1 cables; and constructing or placing the PC-1 cables on or under the seabed, as described in this permit, in accordance with this permit, the settlement agreement, remediation protocol, remediation plan and U.S. Army Corps of Engineers permit.

Project Location: Within the existing corridor of the PC-1 East and PC-1 North cables, from the western Strait of Juan de Fuca to the northwestern boundary of the sanctuary.

Permit Duration: Five years, through November 2020.

Comment: This is a routine renewal of PCL's permit. Minor changes to permit language were made to delete reference to past activities no longer relevant to this permit in the future.

Pending Permit Requests

OCNMS-2016-001 – Michael Zieserl, JOA Surveys

Project Title: Temporary NOAA Tide Gauge at Tskawahyah Island (Cannonball Island)

Permitted Activity: Altering or disturbing the seafloor in connection with the placement, operation and removal of a temporary NOAA tide gauge.

Project Location: The majority of the installation will be on Makah lands on Tskawahyah Island. A small portion of the installation will extend below mean lower low water into the sanctuary.

Permit Duration: Six months, April through September 2016

Comment: The applicant reports that approval for the installation has been provided by the Makah Tribe. Impacts to intertidal resources will be minor (area impacts) and temporary. All equipment will be removed at the end of the project.

LEARN ABOUT YOUR SANCTUARY / NATURAL HISTORY

Pelagic Purple Snails Found on Southern Coast

A dedicated beach cleaning volunteer on the Long Beach Peninsula found purple snail shells with dead animals in the shells while removing marine debris in mid-November. Another dedicated volunteer researched the snails and identified them as the common purple or violet snail, or *Janthina umbilicata*. These snails are holoplanktonic, spending their entire lives floating without settling on land or the seafloor. The common purple snail floats over the temperate and tropical seas on a bed of self-made chitinous bubbles that buoy the animal and its shell on the water surface. While drifting around, these snails feed primarily on *Velutella velutella*. The snails strand on beaches when pushed by onshore winds. These snails on the Long Beach Peninsula washed in with lots of small plastic pieces right after a vigorous storm, depositing in a high wrackline.



El Niño Update

Models indicate that a strong El Niño will continue through the Northern Hemisphere winter 2015-16, followed by weakening and a transition to El Niño-Southern Oscillation (ENSO)-neutral during the late spring or early summer. The

forecaster consensus remains nearly unchanged from last month, with the expectation that this El Niño will rank among the three strongest episodes as measured by the three-month sea surface temperature (SST) departures in the Niño 3.4 region dating back to 1950. Weekly updates are available from the National Weather Service at <http://go.usa.gov/cUnF3>.

Remnants of a Drifter Buoy from Russia Found on Shi Shi Beach

Assistance from Olympic Coast National Marine Sanctuary personnel was requested by Jonathan Scordino of Makah Fisheries to identify a small float with wiring attached. The object was identified as the float of an ARGOS drifter buoy, a tool used by oceanographers to study ocean currents, sea surface temperature, atmospheric pressure, winds and salinity. ARGOS drifter buoys transmit their location and other data to ARGOS satellites in real-time. Joe Petersen of the Makah Tribe found the drifter buoy's float on Shi Shi beach (at approximately 48°15.18 North and 124°41.25 West) on January 2, 2016. It was missing its sub-surface drogue and long cabling, but had the tapered portion of the cabling that attaches to the float. OCNMS personnel reached out to NOAA's Atlantic Oceanographic and Meteorological Laboratory Global Drifter Program to inquire as to whether it belonged to them, but did not. However, they put Jonathan Scordino and OCNMS staff in touch with the buoy's owner from Russia. The buoy was launched by Gennady Kantakov, of Far East Energy Corporation Ltd. on the northwest side of Sakhalin Island to research the currents in the Sea of Okhotsk. The buoy had a drogue 1 m underneath, which is the depth used for nearshore buoys. Open ocean buoys have a drogue at 10 to 15m underneath. The buoy was carried out of the straits and then circled in the ocean. It last transmitted six months ago north of Hawaii. Dr. Kantakov was very excited to learn of its final disposition, and wrote, "since 2008 we have many opportunities to reach NW shore but your proof is definitely first one."



REGIONAL / NATIONAL MARINE SANCTUARY SYSTEM NEWS

West Coast Educators Develop Deep Coral Communities: Sentinels of a Changing Ocean



Educators from Olympic Coast, Greater Farallones, Cordell Bank, Monterey Bay and Channel Islands national marine sanctuaries worked together in collaboration with scientists from NOAA National Centers for Coastal Ocean Science to develop *Deep Coral Communities: Sentinels of a Changing Ocean*, educational materials including a video, a poster and a lesson plan targeted to high school teachers and students. Using research footage from remotely operated vehicles, students utilize real scientific methods to explore deep-sea coral communities and compare and contrast species abundance and diversity in underwater transects from each of the five national marine sanctuaries on the West Coast. Deep-sea coral ecosystems are home to many diverse species. This lesson takes students into these important habitats to identify the soft corals, hard corals, invertebrates and fish found in these communities and to investigate the unique biology of deep-sea corals, the threats these animals

face, and what we can do help protect them. These educational materials are aligned to Next Generation Science Standards, Common Core Education Standards, and Ocean and Climate Literacy Principles. The lesson can be downloaded for free on the National Marine Sanctuaries Education web page (<http://sanctuaries.noaa.gov/education>). This curriculum was presented as part of the NOAA Office of National Marine Sanctuaries and Ocean Acidification Program Sharing Ocean Acidification Resources for Communicators and Educators (SOARCE) webinar series on October 22, 2015 (<http://go.usa.gov/cUneH>). To receive a link to a video archive of the presentation, email noaa.oceanacidification@noaa.gov and visit: <http://go.usa.gov/cUnzW>.

Joint Research Cruise in Hawaiian Islands Sanctuary Sites

NOAA ship *Hi'ialakai* supported a joint Hawaiian Islands Humpback Whale National Marine Sanctuary (HIHWNMS) and Papahānaumokuākea Marine National Monument research cruise for two weeks around the Main Hawaiian Islands. The purpose of the cruise was to characterize the nearshore coral reef habitats of HIHWNMS. Other key partners participating in the cruise included the University of Hawai'i Sea Grant College Program, the NOAA Hawaiian Islands Sentinel Site Cooperative, the National Marine Fisheries Service Coral Reef Ecosystem Program and the State of Hawai'i. The focus of the cruise included assessments of coral bleaching and disease on shallow (<30 m) coral reefs, and characterization of mesophotic coral reef ecosystems (30-100 m). HIHWNMS scientists have done a total of 15 dives within the sanctuary boundary in Maui Nui collecting important data on some reefs that have not been monitored or assessed for bleaching. The team has also successfully documented the current state of the reef with panoramic and close-up photography. Additionally, a few humpbacks whales were sighted, confirming other reports of humpback whale activity in the area.

National Marine Sanctuary Volunteers Contribute 149,000 Hours in FY15

During FY15, NOAA's Office of National Marine Sanctuaries had 11,269 volunteers around the United States helping to protect and conserve America's underwater treasures. These individuals worked 149,795 hours over the fiscal year in the areas of research, monitoring, enforcement, education and outreach. Their work is the equivalent of \$3.46 million dollars of in-kind support or the value and time of 74 full-time employees. Of these, 8,485 specifically supported national marine sanctuary citizen science efforts, such as Sanctuary Ocean Count, Spotter Pro and Beach Watch, with 72,346 hours, which is equivalent to \$1.7 million dollars of the time of approximately 36 full-time employees. For more information about the National Marine Sanctuary System volunteer program, visit <http://go.usa.gov/cUQaP>.

Every Kid in a Park Transportation Grants

To help engage the next generation of park visitors, supporters and advocates, the White House, in partnership with the Federal Land Management agencies, launched the Every Kid in a Park initiative (<http://oceanservice.noaa.gov/ekip>). The immediate goal is to provide an opportunity for fourth-grade students to visit federal public lands and waters throughout the 2015-2016 school year. The National Park Foundation's Every Kid in a Park Transportation Grants join the Foundation's Open Outdoors for Kids program in helping children learn history, culture and science while exploring the great outdoors. The following NOAA sites will offer educational programming for students as part of the Every Kid in a Park Transportation Grants: Cordell Bank National Marine Sanctuary (NMS), Channel Islands NMS, Hawaiian Island Humpback Whale NMS, Thunder Bay NMS, Elkhorn Slough National Estuarine Research Reserve (NERR), Grand Bay NERR, Waquoit Bay NERR, and the Northeast Fisheries Science Center.

NOAA Releases Expansion Proposal for Monitor National Marine Sanctuary

Following several years of scientific and archaeological assessment and public input, NOAA announced plans to consider possible expansion of Monitor National Marine Sanctuary, off the North Carolina coast (<http://go.usa.gov/cUQDP>). The proposed expansion would protect a collection of historically significant shipwrecks including vessels sunk during World War II's Battle of the Atlantic. The waters off North Carolina's Outer Banks contain the single greatest concentration of World War I and World War II shipwrecks in American waters and includes sunken vessels from U.S. and British naval fleets, merchant ships, and German U-boats. Many of the wrecks lie in waters as shallow as 130 feet and serve as popular recreational dive sites. The public is invited to submit comments to the agency on the proposed expansion through March 18. Following the comment period, NOAA may develop a draft environmental impact statement, draft management plan and potential regulations, which will then be available for public review. After reviewing those comments, NOAA would then make a final decision on the proposed expansion. The proposed expansion plans can be found in the Federal Register at <http://go.usa.gov/cUQKH>.

MARINE-RELATED NEWS COVERAGE

Algae Bloom Off Pacific Coast Blamed For Marine Mammal Poisoning

"Scientists have found dozens of poisoned dolphins, whales and sea lions off the coast of Washington, Oregon and California this year. They tested positive for a toxin caused by a massive algae bloom this summer in the Pacific Ocean."

kuow.org/post/algae-bloom-pacific-coast-blamed-marine-mammal-poisoning

Toxin From Vast Algae Bloom off West Coast Found in Wildlife

"Tests on dead or dying marine wildlife show the animals were exposed to a vast bloom of toxic algae that flourished off the West Coast this summer, federal biologists said Tuesday."

www.seattletimes.com/seattle-news/environment/toxin-from-vast-algae-bloom-off-west-coast-found-in-wildlife/

Scientists Study Links Between Climate Change and Extreme Weather

"Did climate change cause that heat wave? That hurricane? That drought? A new collection of studies examined extreme weather events last year, including drought, floods and storms, to look for signs that climate change was a cause or contributor — and found mixed results."

www.nytimes.com/2015/11/06/science/climate-change-extreme-weather-global-warming.html?ref=energy-environment&_r=1

Fisheries Service Approves Navy Plan to Expand Sonar Testing, Other Warfare Training in Area Waters

"The National Marine Fisheries Service said Thursday it has authorized the U.S. Navy's proposal to expand sonar testing and other warfare training off the Northwest coast. The agency said it had determined the exercises would not have major impacts on endangered orcas and other marine mammals."

www.peninsuladailynews.com/article/20151113/NEWS/311139971

Quileute Reservation Cut Off By Flood Waters

“Heavy rains have flooded the one road in and out of La Push on the Washington coast. That means the 300-400 residents of the Quileute Indian Reservation are cut off.”

kuow.org/post/quileute-reservation-cut-flood-waters

To Save the Orcas, Do We Need to Demolish Dams?

“The show is over—at least it’s almost over. SeaWorld has announced that next year, it will phase out its killer whale performances in San Diego. The theme park has been under fire—and, perhaps more importantly, losing visitors—ever since the 2013 movie *Blackfish* documented its abusive treatment of captive killer whales.”

crosscut.com/2015/11/to-save-the-orcas-activists-say-we-need-to-demolish-dams/

When Will a Massive Earthquake, Tsunami Hit the Pacific Northwest?

“Walking down almost any street in Seattle’s historic downtown, Eric Holdeman sees danger. Holdeman ran the King County Office of Emergency Management for 11 years. He doesn’t think the area around Pioneer Square would do well in a powerful earthquake.”

america.aljazeera.com/watch/shows/america-tonight/articles/2015/11/13/massive-earthquake-tsunami-pacific-northwest.html

Federal Fish Managers Brace For Another Warm Year In The Northwest

“The summer’s early snowmelt, record temperatures and drought in the Northwest killed young hatchery fish and adult fish returning to spawn. And federal experts are expecting 2016 to be even worse for fish.”

kuow.org/post/federal-fish-managers-brace-another-warm-year-northwest

UW Symposium: Ocean Acidification Pushing Boundaries of Environmental Law

“The University of Washington held its first annual symposium on environmental law last week. The idea is to choose a topic and examine how it fits into current and future regulations. This year’s focus—ocean acidification.”

www.kplu.org/post/uw-symposium-ocean-acidification-pushing-boundaries-environmental-law

Washington Tribe Confronts Climate Change, Sea Level Rise

“A big question will confront international leaders in the next round of climate talks in Paris: How do they help poor, island and coastal nations threatened by rising oceans, extreme weather and other climate change-related risks?”

kuow.org/post/washington-tribe-confronts-climate-change-sea-level-rise

Record Levels of CO2 Herald the Future Climate Change

“The Earth’s climate has changed. After nearly two centuries of fossil-fuel burning, concentrations of carbon dioxide in the atmosphere have reached 400 parts per million, especially boosted by the seemingly ever-accelerating amount of combustion in the last few decades according to the World Meteorological Organization.”

www.scientificamerican.com/article/record-levels-of-co2-herald-the-future-of-climate-change/

Moving Salmon Pens From Port Angeles Harbor Into Strait Considered in Light of Navy Pier Plan

“A seafood company is proposing to move its Atlantic salmon fish farm operations out of Port Angeles Harbor and into the Strait of Juan de Fuca by 2017 because of plans for a Navy pier.”

www.peninsuladailynews.com/article/20151117/news/311179991/moving-salmon-pens-from-port-angeles-harbor-into-strait-considered-in

Billy Frank, Jr., William Ruckelshaus honored With the Presidential Medal of Freedom

“Two influential figures from Washington state, each with a long record of environmental leadership, were named Monday as recipients of the Presidential Medal of Freedom.”

www.seattletimes.com/seattle-news/obama-to-present-medal-of-freedom-to-2-environmental-leaders-from-state/

Toxic Algae Creating Deep Trouble on West Coast

“It’s among the tiniest of living things: just a single cell. But *Pseudo-nitzschia*, a type of algae that produces a powerful neurotoxin, is big trouble. A toxic algae bloom of unprecedented size and persistence began flourishing off the West Coast last May, affecting wildlife and fisheries from Alaska to Southern California.”

www.seattletimes.com/seattle-news/environment/toxic-algae-creating-deep-trouble-on-west-coast/

NOAA Fisheries Assists Olympic National Park in Reopening Elwha River

“NOAA Fisheries’ West Coast Region recently played a key role in helping Olympic National Park fund the removal of massive boulders in the Elwha River that were blocking migrating salmon, steelhead and bull trout even after the landmark

removal of dams on the river.”

www.westcoast.fisheries.noaa.gov/stories/2015/17_11172015_collaboration_blasts_elwah_rocks.html

5 Ways Climate Change Will Impact Our Health

“When it comes to climate change, scientific models suggest that the Pacific Northwest will get off relatively easy. Some have even suggested that the region will see a population boom, as “climate refugees” make their way to region to escape droughts, unbearable heat, flooding and other conditions.”

crosscut.com/2015/11/5-ways-climate-change-will-make-the-puget-sound-less-healthy/

New Research Shows Banned Chemicals Still a Threat to Seafood

“A study just released by the WA Department of Health offers a new warning about eating the iconic Northwest Dungeness crab. For the first time, researchers looked into the effects of eating excess crab in Port Angeles Harbor. A mill, closed long ago, is still having a negative impact on marine life there.”

m.kirotv.com/news/news/new-research-shows-banned-chemicals-still-threat-s/npQcQ/

Record Harmful Algae Bloom Appears to be Declining

“A record-breaking harmful algal bloom that for months stretched from Santa Barbara into Alaska and dumped deadly neurotoxin into the ocean appears to be in decline, according to a government researcher.”

www.scpr.org/news/2015/11/24/55866/record-harmful-algae-bloom-appears-to-be-declining/

Oregon and Washington Delay Crab Season Because of Toxin

“Oregon and Washington have joined California in delaying the start of their commercial crab seasons after dangerous toxin levels were found in the crabs.”

www.seattletimes.com/seattle-news/washington-and-oregon-delay-crab-season-because-of-toxin/

NOAA Expects 2015 to be Warmest Year on Record

“October 2015 was the warmest October since record-keeping began in 1880, and scientists at the National Oceanic and Atmospheric Administration said Thursday that 2015 likely will become the warmest year on record.”

voices.nationalgeographic.com/2015/11/20/noaa-expects-2015-to-be-warmest-year-on-record/

Earth is a Wilder, Warmer Place Since Last Climate Deal Made

“This time, it’s a hotter, waterier, wilder Earth that world leaders are trying to save. The last time that the nations of the world struck a binding agreement to fight global warming was 1997, in Kyoto, Japan.”

www.dailypress.com/usworld/earth-is-a-wilder-warmer-place-since-last-climate-deal-made

Facing Rising Waters, A Native Tribe Takes Its Plea To Paris Climate Talks

“International leaders gathering in Paris to address global warming face increasing pressure to tackle the issue of ‘climate refugees.’ Some island nations are already looking to move their people to higher ground, even purchasing land elsewhere in preparation.”

kuow.org/post/facing-rising-waters-native-tribe-takes-its-plea-paris-climate-talks

Seafloor Samples Reveal Ghosts Of Blobs Past

“A huge mass of warm water in the Pacific Ocean is causing problems off the coast of Oregon and Washington. The so-called ‘blob’ is being blamed for toxic algae blooms, which have caused marine mammal deaths and crabbing closures. New evidence shows this isn’t the first time the blob has appeared off the Northwest coast.”

kuow.org/post/seafloor-samples-reveal-ghosts-blobs-past

Company Abandons Crude Oil as Part of Shipping Expansion Plan in Grays Harbor

“One of the three companies proposing crude oil shipping terminals in Grays Harbor said it will abandon its plans to handle crude oil in comments submitted to state and local agencies in late November 2015.”

earthjustice.org/news/press/2016/company-abandons-crude-oil-as-part-of-shipping-expansion-plan-in-grays-harbor

The President Signs a National Microbead Ban

“On Monday, December 28th, President Obama signed the Microbead-Free Waters Act of 2015 into law. This new law bans plastic microbeads in cosmetics and personal care products, requiring companies to stop manufacturing products that contain them.”

marinedebrisblog.wordpress.com/2015/12/30/the-president-signs-a-national-microbead-ban/

NOAA: Stools of Endangered Orca Show They Mostly Just Eat Salmon in Summer

“Salmon makes up 98% of the diet of an endangered species of orca, scientists have discovered by examining their excrement. Researchers from the National Marine Fisheries Service (NOAA) spent five years collecting 175 faecal samples from the southern resident killer whale population in the Salish Sea to work out its diet – a find that will help conservation efforts in the future.”

www.ibtimes.co.uk/noaa-stools-endangered-orca-show-they-mostly-just-eat-salmon-summer-1536412

Pacific Warm-Water ‘Blob’ Weakens, NOAA reports; El Niño Looking Strong

“The mysterious warm-water ‘blob’ in the Pacific Ocean has weakened a bit, NOAA scientists reported in mid-December. Strong winds dominating the West Coast during much of November brought ‘cold air and some new upwelling of deep, cold water that weakened the warm patches that made up the blob,’ said Nathan Mantua of NOAA’s Southwest Fisheries Science Center.”

www.chinookobserver.com/co/outdoors/20160105/pacific-warm-water-blob-weakens-noaa-reports-el-nino-looking-strong

NOAA Expedition Will Map Effects of El Nino on Ocean

“A freezer at NOAA’s Northwest Fisheries Science Center is filled with frozen mammal organs. They’re clues to help solve a mystery of sick mammals across the West Coast. ‘This is an example of stomach contents from a fin whale,’ Kathi Lefebvre said.”

www.king5.com/story/tech/science/environment/2016/01/06/el-nino-noaa-expedition/78333284/

OCNMS ONLINE

Visit our website at: <http://olympiccoast.noaa.gov/>.

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<https://www.facebook.com/usolympiccoastgov>

<https://twitter.com/olympiccoast>

Please take a few moments to peruse the site. Your feedback is greatly appreciated.

*Comments and suggestions can be sent to:
Jacqueline.Laverdure@noaa.gov.*

OCEAN-RELATED WEBSITES

National Oceanic and Atmospheric Administration

<http://www.noaa.gov/>

National Ocean Service

<http://www.nos.noaa.gov/>

Office of National Marine Sanctuaries

<http://www.sanctuaries.nos.noaa.gov/>

NOAA Marine Debris Program

<http://marinedebris.noaa.gov/>

NOAA Online Media Library

<http://sanctuaries.noaa.gov/photos>

Encyclopedia of National Marine Sanctuaries

<http://www8.nos.noaa.gov/onms/park/>

NOAA Ocean Explorer

<http://oceanexplorer.noaa.gov/>

National Data Buoy Center

<http://www.ndbc.noaa.gov/rmd.shtml>

Washington’s Ocean Resources

<http://www.ecy.wa.gov/programs/sea/ocean/index.html>

CoastWatch – West Coast Regional Node

<http://coastwatch.pfel.noaa.gov/>

Northwest Association of Networked Ocean Observing Systems

<http://www.nanoos.org/>

NOAA’s Pacific Marine Environmental Laboratory

<http://www.pmel.noaa.gov/>

OLYMPIC COAST NATIONAL MARINE SANCTUARY

Learn More About Your Sanctuary

The Sanctuary Office Report is produced bi-monthly by Olympic Coast National Marine Sanctuary in conjunction with sanctuary advisory council meetings. To learn more about the sanctuary, please visit our website at:

<http://www.olympiccoast.noaa.gov>.

To learn more about the sanctuary advisory council, please visit:

http://olympiccoast.noaa.gov/involved/sac/sac_welcome.html.

Office of National Marine Sanctuaries (ONMS)

Olympic Coast National Marine Sanctuary is one of the marine protected areas in the National Marine Sanctuary System encompassing more than 170,000 square miles of marine and Great Lakes waters from Washington State to the Florida Keys and from Lake Huron to American Samoa. The system includes thirteen national marine sanctuaries and Papahānaumokuākea and Rose Atoll marine national monuments. Visit the ONMS website at:

<http://sanctuaries.noaa.gov/>.

Get Involved!

To learn how to get involved in the sanctuary visit:

<http://olympiccoast.noaa.gov/involved/welcome.html>.

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